

मौसम पूर्वानुमान आधारित साप्ताहिक सलाह

Weather Forecast Based Weekly Advisory

(Assumption: Fruit Pruning date - 15/09/2018)

I. Weather Data for the Prevailing Week

Thursday (11/04/2019) – Thursday (18/04/2019)

Location	Temperature (°C)		Possibility of Rain	Cloud Cover	Wind Speed (Km/hr)	R H%	
	Min	Max				Min	Max
Nashik	22-25	36-40	Nashik, Ojhar, Pimpalgaon Baswant, Palkhed, Dindori, Vani, Niphad Mon Drizzling	Clear	04-15	14-25	36-52
Pune	23-25	37-41	Pune, Loni Kalbhor, Uruli Kanchan, Yavat, Patas, Supa, Junnar, Narayangaon Mon Drizzling Baramati Sun-Mon Drizzling	Clear	04-15	14-29	42-51
Solapur	26-27	38-40	Solapur, Nanaj, Kati, Pangri, Barshi, Vairag, Tuljapur, Osmanabad, Tuljapur, Latur, Ausa, Pandharpur, Kasegaon Tue Light Rain Atpadi Sun Drizzling	Clear	05-14	14-24	37-44
Sangli	25-27	39-41	Shetfal Tue Light Rain Arag, Kavathe Mahankal	Clear	05-16	14-20	52-60

			Sat- Drizzling Khanapur, Palsi, Kagvad,Shirguppi Sun Drizzling				
Bijapur	27-28	39-41	Bijapur, Tikota,Telsang Fri, Sun- Mon Drizzling Chadchan Thu-Fri, Tue Drizzling	Clear	05-16	13- 20	36- 46
Hyderabad	24-26	39-40	Zahirabad Medchal Wed Light Rain	Clear	06-12	23- 24	57- 70

Note: Above weather information is summary of weather forecasting given in following websites

<http://www.imd.gov.in/>, <http://wxmaps.org/pix/prec6.html>, <http://www.fallingrain.com/world/IN/>, <http://www.wunderground.com/>, <http://www.bbcweather.com-weather/1269750>, etc.

II. a) Days after pruning: Nil

b) Expected growth stage of the crop: - Post harvest resting / very early pruning stage

III. Water management (Dr. A.K. Upadhyay)

Expected pan evaporation: 8.5 to 11 mm

Amount of irrigation advised:

1. **Rest period:** Provide only need based irrigation to protect the existing leaves from drying and also contribute towards increasing the reserves of the vines through photosynthetic activity. The quantum of irrigation water applied should be approx. 5000 – 7500 L/ acre, once in a week. Care should be taken to reduce/stop the water in case new growth is observed on the shoot.

2. Shoot growth stage:

a) Irrigation water < 1dS/m : apply irrigation through surface drip @ 11,560 to 12,920 L/acre per day during shoot growth stage for Nasik, Pune and Hyderabad region and from 12,920 - 14,960 L/acre per day for Solapur, Sangli and Bijapur region.

- b) Saline irrigation water (1.1 – 2.0 dS/m): apply irrigation through surface drip @ 14,450 to 16,150 L/acre per day during shoot growth stage for Nasik, Pune and Hyderabad region and from 16,150 - 18,700 L/acre per day for Solapur, Sangli and Bijapur region.
- c) Mulching the vineyards during this period will reduce the salinity build up in the root zone as there will be no evaporation from the soil surface. This will also reduce the irrigation water requirement by another 10%.
3. **Fruit Bud Differentiation stage:** Apply irrigation through surface drip @ 5000 to 5500 L/acre per day during shoot growth stage for Nasik, Pune and Hyderabad region and from 5500-6000 L/acre per day for Solapur, Sangli and Bijapur region.
4. In case there is **probability of less irrigation water availability**, then flood the bund (not whole vineyard) at pruning and mulch the bunds. Flooding the bund will reduce the accumulated salt load in the root zone and mulching will reduce the evaporation of water from soil surface. Thus, this will reduce the salt load in the soil and at the same time saturate the soil leading to proper sprouting. Further, in case less irrigation water is available still the newly emerging shoots will not be damaged due to salinity.
5. **Cover the cordons of the pruned vines with shadenet**, if available, for uniform sprouting as well as reducing the irrigation water needs by 20-25 %. Shadenet coverage will reduce the temperature impact on the cordons. However, remove shadenet at 3-5 leaf stage.
6. If shadenet is not available, spray the cordons with water during the peak heat period i.e. 2-3 pm to reduce the heat effect on the buds.

IV. Soil and Nutrient requirement (Dr. A.K. Upadhyay)

Rest period to Foundation pruning:

1. Before pruning, test the vineyard soil and irrigation water to plan for soil, nutrient and water management.
2. Apply 10kg Urea, 10 kg DAP and 10 kg Sulphate of Potash/ acre in two splits every 15-20 days.
3. The vineyards where sodicity problems are there, apply gypsum to the soil for removal of sodium from the soil exchange complex. In case of calcareous soils, use sulphur for similar purpose.

Foundation pruning season:

1. Apply FYM/ compost/other organic sources including green manuring atleast 12-15 days before Foundation pruning. If possible mix 200 kg Single super phosphate in the FYM and apply in the soil. Application of organics improves the nutrient and water retention in the root zone and reduces nutrient losses from the profile.

2. If soils are calcareous in nature, then apply 50 kg sulphur between the vines in the soil. The sulphur should be properly mixed in the soil for improving its efficacy in taking care of calcium carbonates. Mixing of sulphur in organics lead to better utilization of sulphur for reducing calcium carbonate in the root zone along with reduction in soil pH also.
3. At shoot growth stage, apply 25 kg urea/ acre in 2 -3 splits after sprouting. In case of vigorous growth of shoots, stop nitrogen application and wait for the growth to stabilize before resuming nitrogen application. In calcareous soils, do not apply urea, instead use Ammonium sulphate @ 40 kg/acre in at leastf 3 splits from sprouting onwards till next 10 days. However, based upon the vigour of the vine manage the nitrogen application rate.
4. During fruit bud differentiation stage, based upon soil test values, apply 45 – 50 kg phosphoric acid or 250 kg SSP in case the soils are deficient in phosphorus. Phosphoric acid application is desirable in calcareous soils.
5. At 45 DAP, perform petiole test to know the nutrient content of the vines. The petioles should be collected from 5th leaf from the base of the shoot counting the leaves even if they have been removed.
6. Keep a close watch on the development of leaf blackening symptoms from the margin.

V. Requirement of growth regulators (Dr. S.D. Ramteke)

At this period, the temperature goes upto 40 + centigrade, hence whenever grape growers does the pruning after appropriate rest period, they have to apply water sprays to have uniform sprouting. This has to be done almost every day for 3 times This may help not only to reduce the temperature slightly but also to increase the humidity in the field a bit. In turn it may result into uniform and early sprouting. If this is done properly then probably, there is no need of application of H₂CN₂ in the vineyards.

VI. Canopy management (Dr. R.G. Somkuwar)

Cultural practices to be followed:

The new vineyard:

While developing the framework in new vineyard, care should be taken for the following:

1. The trunk should be developed in the instalments. After bud sprouts, the new growth to be pinched at about 2 feet height. The side shoots should also be pinched at about 3-4 leaf.

This will help to strengthen the trunk in terms of reserved food material require for the development of fruitful canes on a vine.

2. The cordon should also be developed using “stop n go” method. This will help to obtain more number of canes during the first year.
3. During the cordon development stage, the sudden rainfall may hamper the uptake of potash thereby leading to leaf cupping symptoms. Hence, application of potash @ 2.0g/litre water through spray will avoid the deficiency.
4. During this stage, high temperature coupled with increased relative humidity may lead to succulence of leaf. This will make the vine susceptible to thrips attack. Severe damage due to thrips may affect the shoot growth. Chlorophyll reduction in leaf will also result into reduced storage of food material. Hence, under this situation, insecticide spray will help to check the thrips population.

VII. Disease management (Dr. S.D. Sawant and Dr. Sujoy Saha)

Days after pruning	Risk of diseases			
	Downy mildew	Powdery mildew	Anthracnose	Others (specify)
—	Nil	Nil	Low	Bacterial spot

Wherever pruning is complete, the arms are exposed to hot sun and as they are exposed to direct sunlight, their temperature increases to 50-52⁰ C. It is advised to spray water around 1-2pm in the afternoon to protect the arms from excess heat as well as to ensure uniform sprouting. Early sprouting will provide the necessary shade to the arms. Precaution should be taken that arms do not dry up or otherwise borers might get attracted towards them. In areas where pruning is done application of Mancozeb @ 2g/L + Thiophenate methyl @ 1g/L may be done to control bacterial spot and anthracnose diseases.

VII. Insect and Mite management. (Dr. D.S. Yadav)

	Risk of pests

Days after pruning	Mealybug	Mite	Thrips/leafhopper	Caterpillar
>165 days after fruit pruning Stage: Vine resting stage after harvest	High	High	Low	Nil
Just after foundation pruning	High	Nil	Nil	Nil

- Spot plant wash with buprofezin 25 SC @ 1.25 ml per litre water with 1.5-2.0 litre water per plant.
- Sulphur 80 WDG @ 1.5-2.0 g/L or abamectin 1.9% EC @ 0.75 ml/L water may be applied if mite infestation is observed.

Crop advisory relevant to different places is prepared by experts, considering forecasted weather, crop growth stages in majority of vineyards and ground information on incidence of different conditions in different grape growing areas received from regular interaction with progressive grape growers. No claims are made on its correctness.

Usefulness of this information may be communicated to us at director.nrcg@icar.gov.in.

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